CLAIM AMENDMENTS:

Claim 1 (Currently Amended): A method of fabricating a semiconductor device, having a silicon layer disposed on an insulating film, the method comprising:

oxidizing a surface of the silicon layer to form a pad oxide film;

implanting oxygen ions through the pad oxide film and into selected parts of the silicon layer; and

oxidizing the selected parts of the silicon layer, into which the oxygen ions have been implanted, and while the selected parts are still covered by the pad oxide film, to form isolation regions dividing the silicon layer into a plurality of mutually isolated active regions.

Claim 2 (Original): The method of claim 1, wherein the silicon layer has a thickness of at most seventy nanometers.

Claim 3 (Original): The method of claim 1, wherein the semiconductor device is a fully depleted silicon-on-insulator device.

Claim 4 (Original): The method of claim 1, wherein the isolation regions are field oxide regions.

Claim 5 (Original): The method of claim 1, wherein the implanted oxygen

ions have a concentration that varies from an upper surface of the silicon layer to a lower surface of the silicon layer.

Claim 6 (Original): The method of claim 1, wherein the implanted oxygen ions have a peak concentration in a lower half of the silicon layer.

Claim 7 (Canceled).

Claim 8 (Currently Amended): A method of fabricating a semiconductor device, having a silicon layer disposed on an insulating film, the method comprising:

oxidizing a surface of the silicon layer to form a pad oxide film;

forming a first oxidation-resistant film on the pad oxide film ~~silicon layer~~;

selectively removing the first oxidation-resistant film from parts of the silicon layer;

implanting oxygen ions through the pad oxide film and into the silicon layer, using remaining parts of the first oxidation-resistant film as a mask; and

oxidizing the parts of the silicon layer into which the oxygen ions have been implanted, and while the parts are still covered by the pad oxide film, to form isolation regions dividing the silicon layer into a plurality of mutually isolated active regions.

Claim 9 (Original): The method of claim 8, wherein the silicon layer has a thickness of at most seventy nanometers.

Claim 10 (Original): The method of claim 8, wherein the semiconductor device is a fully depleted silicon-on-insulator device.

Claim 11 (Original): The method of claim 8, wherein the isolation regions are field oxide regions.

Claim 12 (Original): The method of claim 8, wherein the implanted oxygen ions have a concentration that varies from an upper surface of the silicon layer to a lower surface of the silicon layer.

Claim 13 (Original): The method of claim 8, wherein the implanted oxygen ions have a peak concentration in a lower half of the silicon layer.

Claims 14-16 (Canceled).

Claim 17 (Original): The method of claim 8, wherein the first oxidation-resistant film comprises at least one of a nitride film and a photoresist film.

Claim 18 (Original): The method of claim 8, further comprising:

depositing a second oxidation-resistant film after the first oxidation-resistant film has been removed from said parts of the silicon layer; and

etching the second oxidation-resistant film to leave sidewalls on vertical edges of the remaining parts of the first oxidation-resistant film before the oxygen ions are implanted.

Claim 19 (Original): The method of claim 18, wherein the second oxidation-resistant film is an oxide film or a nitride film.

Claim 20 (New): A method of fabricating a semiconductor device, comprising:

providing a supporting substrate having an insulating film disposed thereon, and having a silicon layer disposed on the insulating film;

oxidizing a surface of the silicon layer to form a pad oxide film;

implanting oxygen ions through the pad oxide film and into selected parts of the silicon layer; and

oxidizing the selected parts of the silicon layer, into which the oxygen ions have been implanted, and while the selected parts are still covered by the pad oxide film, to form isolation regions dividing the silicon layer into a plurality of mutually isolated active regions.